WMG

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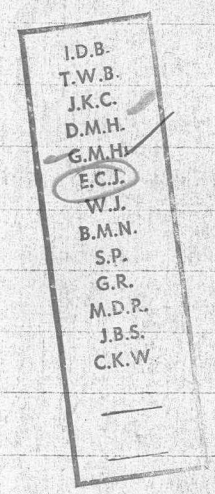
KERR ADDISON MINES

GRUM JOINT VENTURE

Preliminary Report on the Petrography and Mineralography of Polished Sections of ~~the~~ Sulphides from the Grum Deposit.



M/d de Quadros
19 January 1976
Faro, Yukon.

PC = GHOGG
27 Jan. 76

c) A faint trace of a third foliation is seen occasionally; from structural relationships, it would appear to be older than F_1 and therefore possibly the F_0 or the original bedding plane. The presence of such a foliation will have to be determined in the field rather than under a microscope.

d) The ore minerals are fine grained; the average grain sizes as follows:

Pyrite	average	0.3 - 0.6 mm	range	0.01 - 10 mm.
Galena		0.08 - 0.2 mm		0.01 - 1.0 mm
Sphalerite		0.05 - 0.4 mm.		0.01 - 1.5 mm
Chalcopyrite		0.04 - 0.4 mm.		0.02 - 0.3 mm
Pyrrhotite		0.01 - 0.02 mm		0.01 - 0.4 mm
Tetrahedrite		?		less than 0.01 mm
Magnetite		not identified		—

It should be noted that occasionally coarser mineralisation has been observed in hand-specimen, especially in the deeper ore bands west of 82W; in these, occasional crystals of sphalerite up to 5 cm have been and of galena up to 2 mm have been observed.

e) The crystallinity of the major sulphides grades from pyrite, the most euhedral, to galena, the most anhedral. In general, pyrite tends to be euhedral to anhedral, sphalerite subhedral to anhedral and galena anhedral. Larger crystals tend to be 'corroded' and deeply embayed resulting in a deeply interlocking matrix of minerals; these 'corroded' crystals tend to occur in bands interlayered with less corroded bands, suggesting some degree of control on the corroding medium by the foliation F_1.

f) The minor sulphides are not abundant enough and do not occur in enough slides to allow broad generalisations. So far as observed, pyrrhotite appears to occur in anhedral blebs; tetrahedrite? tends to be subhedral; and chalcopyrite as flaky totally anhedral particles.

galena in the sphalerite. Should the silver prove to be in galena, then one can expect ~~consid~~ some loss of silver in the galena which will be in the tailings.

In comparison with the other ore deposits in the Anvil Ranges, the ore minerals at Gyrem appear to have similar mineralogical and textural relationships as the ore at Anvil, Swim and Vangorda, though possibly less magnetite and pyrrhotite. The grain size of Gyrem ore is coarser than the ore at Vangorda and Swim by a ratio of 1 to 2 or 3 but finer than the ore at Anvil by a ratio of 1 to 365.

Mel de Quadros
19th Jan 1976

OBJECTIVES .1 - .3 mm

M.P DIAMETER 2 mm

H.P. " 0.2 mm "

1248 BANDED MASSIVE SULPHIDE

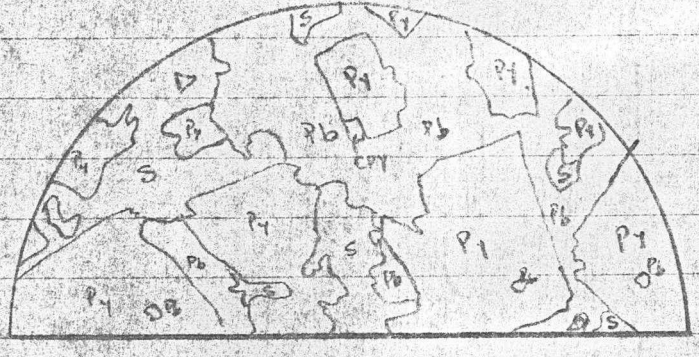
Pyrite average size 0.2 - 0.4mm

generally euhedral to subhedral to anhedral

± minor inclusions of Pb2u (mostly Pb)

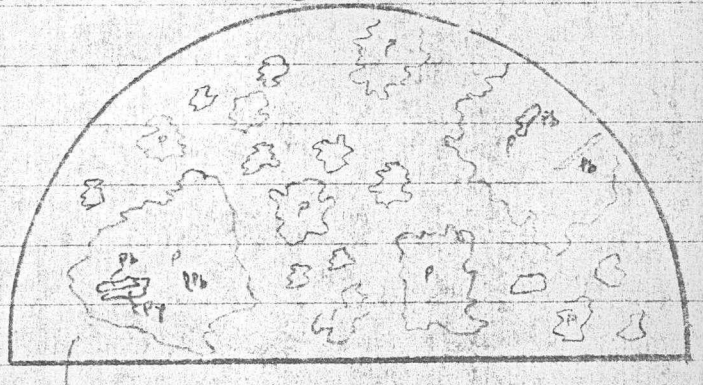
Pb2u interstitial, totally anhedral, cementing Py grains.

CPy rare, fine xals up to 0.05 mm long.



← DIAMETER 1MM →

(a)



← 2MM →

(b)

fine interstitial Gn/Sp less than 0.02mm average grain size

TEXTURE

BANDED; ALT. BANDS SHOWN IN ABOVE TWO DIAGRAMS,

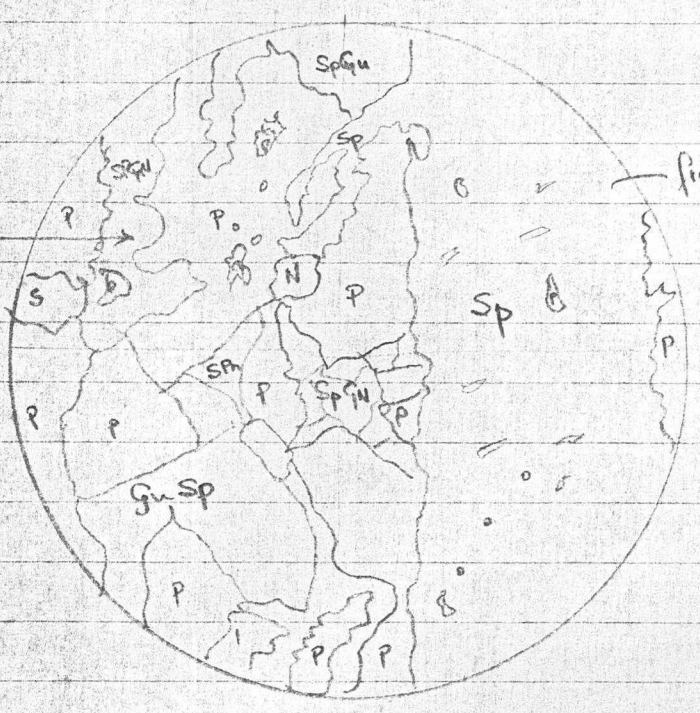
a) PYRITIC BANDS TEND TO BE COARSER, WITH EUHEDRAL PYRITE WITH SLIGHTLY 'CORRODED' EDGES. THESE BANDS CONTAIN LARGE PLATES OF ANHEDRAL GN + SP

b) THE RICHER BANDS CONSIST OF DEEPLY CORRODED AND EMBAYED ROUNDED ANHEDRAL PYRITE CEMENTED IN A MATRIX OF VERY FINE DEEPLY EMBAYED AND INTERGROWN PSP AND GN ± VERY MINOR NON-OPAQUE GANGE WHICH IS GENERALLY AS INCLUSIONS IN SPHALERITE.

12410 MASSIVE SULPHIDE

Pyrite : rounded anhedral grains, averaging 0.5 - 0.8 mm with embayments of Gn and Sp
~ minor inclusions of Gn and Sp, less than 0.05 mm generally rounded.

Galena + Sphalerite : interstitial and intergrown, anhedral, grains rarely larger than 0.2 mm, averaging 0.05 - 0.04
~ inclusions of py and minor nonopaques.



finely intergrown Sp and Gn, with irregular boundaries. Minor Py and Sanguine

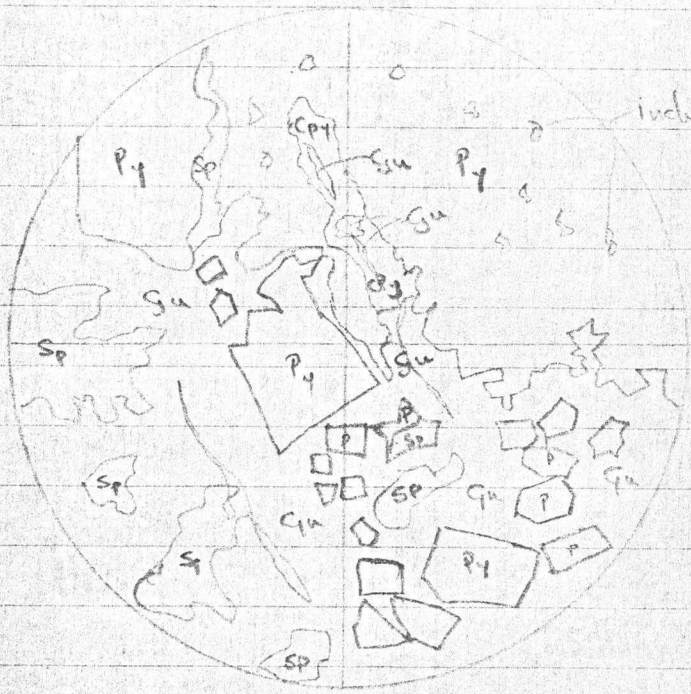
fracture infilled with Sph with trace Py and Gn

(DIAMETER = 2.0 mm)

Texture: Essentially larger anhedral Py cemented by a fine matrix of intergrown Gn and Sp with minor Py. The Gn/Sp often growing into embayments in Py. Minor GnSp also present in very small inclusions in Py.

12411 BANDED MASSIVE SULPHIDE

MINERALS: Pyrite; a) large rounded xals up to 10mm. accross; deeply 'corroded' and anhedral, with inclusions of Gn, Sp, generally less than 0.2mm. Numerous fractures infilled with Gn; rather dusty. Large fracture filling?
& small euhedral crystals, 0.05 - 0.5 mm, generally clean except for rounded Gn inclusions (up to 0.01mm)



inclusions of Gn and Sp, intergrown

DIAMETER 2MM.

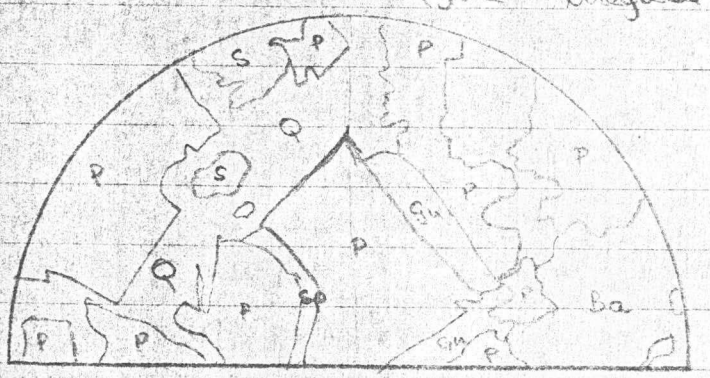
Galena: interstial to pyrite, with inclusions of Sph and Py.
Sphalerite: interstial with galena, generally as inclusions within galena; very irregular edges
Chalcopyrite: minor, as inclusions within pyrite
Non-opaques: rare, very small (less than 0.01mm)

TEXTURE: Very uneven grain size; consisting essentially of Py grains cemented by Gn with inclusions of Sp and Py. Large Py grain edges show composite crystal edges, the re-entrant surfaces being infilled by galena. Overall interlocking.

12413 QUARTZ - BARITE - SULPHIDE

MINERALS

QUARTZ	40%	
BARITE	10%	
PYRITE	irregular, corroded + embayed, intergrown with q + ba + cpy	40%
GALENA	irregular, as above	
Sphalerite	irregular, as above	
Chalcopyrite	irregular, often with galena	



0·2mm

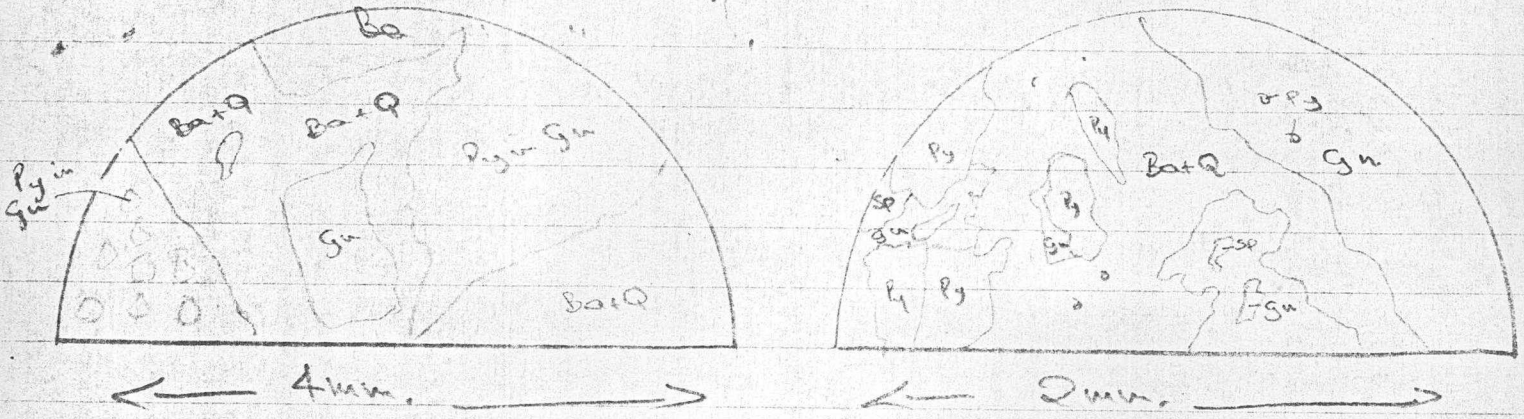
0·2mm

TEXTURE: Very fine, intergrown, rarely xtals subhedral (esp. pyrite) generally totally anhedral with embayed or 'corroded' edges. Cpy generally above in quartz but rarely intergrown with galena and sphalerite.

Banding (F_2) obvious under low power due to grain size and Pb/Zn distribution.

1243C SULPHIDE BRECCIA

Minerals: Pyrite: large xals up to ± 30 mm, intergrown with Gn
Gn: intergrown with Py; also in fractures
Sp: traces
Quartz: cementing



Texture: The pyrite xals highly fractured and recemented by galena with minor sphalerite. These plates is then cemented together by a matrix of Ba+Q and also Gn